



[1] EU-TYPE EXAMINATION CERTIFICATE

[2] Equipment or Protective System intended for use in potentially explosive atmospheres - Directive 2014/34/EU – Annex III MODULE B: EU-TYPE EXAMINATION

[3] EU-type Examination Certificate number: **IMQ 24 ATEX 031 X**

[4] PRODUCT: **Thermometric assembly**
TYPE/SERIES: **Q1 and S2**

[5] MANUFACTURER: **Elsi S.r.l.**

[6] ADDRESS: **Via Milano, 11 – 20045 Lainate (MI) - Italy**

[7] This equipment and any acceptable variation thereto are specified in the annex to this certificate and the documents therein referred to.

[8] IMQ, notified body N° 0051, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in Report No.: **AT20-0057864-01**

[9] Compliance with Essential Health and Safety Requirements, except in respect of those listed at item 18 of the annex, has been assured by compliance with:

EN IEC 60079-0:2018; EN 60079-1:2014; EN 60079-31:2014; EN 60079-26:2015

[10] If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate

[11] This EU-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

[12] The marking of the equipment or protective system shall include the following:

	II 2G	Ex db IIC T6...T1 Gb	For Series Q1
	II 2D	Ex tb IIIC T80°C...T440°C Db	
	II 1/2G	Ex db IIC T6...T1 Ga/Gb	For Series S2
	II 1/2D	Ex tb IIIC T80°C...T440°C Da/Db	

THIS CERTIFICATE IS COMPOSED OF 6 PAGES INCLUDING 1 ANNEX.

FIRST ISSUE	2024/05/28
CURRENT ISSUE	2024/05/28
PREVIOUS ISSUE	-
EXPIRING DATE	2034/05/27

B.U. PRODUCT
CERTIFICATION SECTOR - MANAGER

This Certificate may only be reproduced in its entirety and without any change. It is subject to the general rules for assessing conformity to community directives for which IMQ operates as notified body n°. 0051 and to the special requirements for Directive 2014/34/EU (ATEX) "Equipment and protective systems for potentially explosive atmospheres" annex III - MODULE B – EU Type-examination.



PRD N° 005 B

Membro degli Accordi di Mutuo Riconoscimento EA, IAF e ILAC
Signatory of EA, IAF and ILAC
Mutual Recognition Agreements

[13] **Annex**

[14] EU-type Examination Certificate number: **IMQ 24 ATEX 031 X**

[15] **Description of product:**

Thermometric assemblies, Series Q1 and S2, are used to measure (by means of a resistive sensor, RTD, or thermocouple, T/C) the temperature of solids, liquids or gases.

They are suitable to be used in presence of gas (Group IIC) and/or dust (Group IIIC).

Series Q1 can be installed in Zone 1 and/or Zone 21, while Series S2 can be installed on the boundary wall between Zone 0 (or Zone 20) and Zone 1 (or Zone 21) with the terminal enclosure placed in the Zone 1 (or Zone 21).

The equipment are made of metallic material and they are composed of an enclosure (which contains the terminals and/or the conversion/supply electronic circuit) and a stainless steel thermowell (for Series S2) which contains the probe or a threaded fitting (for Series Q1) for connection to the process made of stainless steel.

The probe can be made of AISI 316, AISI 321 or INCONEL 600 (with a minimum diameter of 3 mm and minimum thickness of 0.45 mm), the cable has magnesium oxide insulation and its end is closed with an epoxy resin.

For Series Q1, the terminal enclosure is connected to the probe through a threaded fitting which is welded to it and, when it is supplied with, a threaded fitting for process connection.

This threaded fitting for process connection is fixed to the probe by welding or through a sliding threaded compression fitting (which is part of this certification) which allows the user to choose where to position the thermowell on the probe.

The thermowell is connected to the process through a threaded joint.

For Series S2, the terminal enclosure is connected to the thermowell through a stainless steel nipple (which is part of this certification), a galvanized steel three pieces joint (already ATEX and IECEx certified) and another galvanized steel nipple (already ATEX and IECEx certified). The thermowell is connected to the process through a joint (threaded, flanged or welded).

The probe (which includes up to three sensors) is included in the thermowell and kept in position through the use of two elastic ring and a spring.

The thermowell can be made of AISI (304, 304L, 310, 316, 316L, 321, 321H, 347, 446), INCOLOY 800 (or 825), INCONEL 600 (or 601), INCOLOY 625, MONEL or HASTELLOY.

In order to be suitable for EPL Ga (or Da) a thermowell with thickness greater than 1 mm is used in conjunction to two addition "flameproof joints" (one between the nipple and the probe and one realized by the three-piece joint) and a "dust tight joint" before the partition wall.

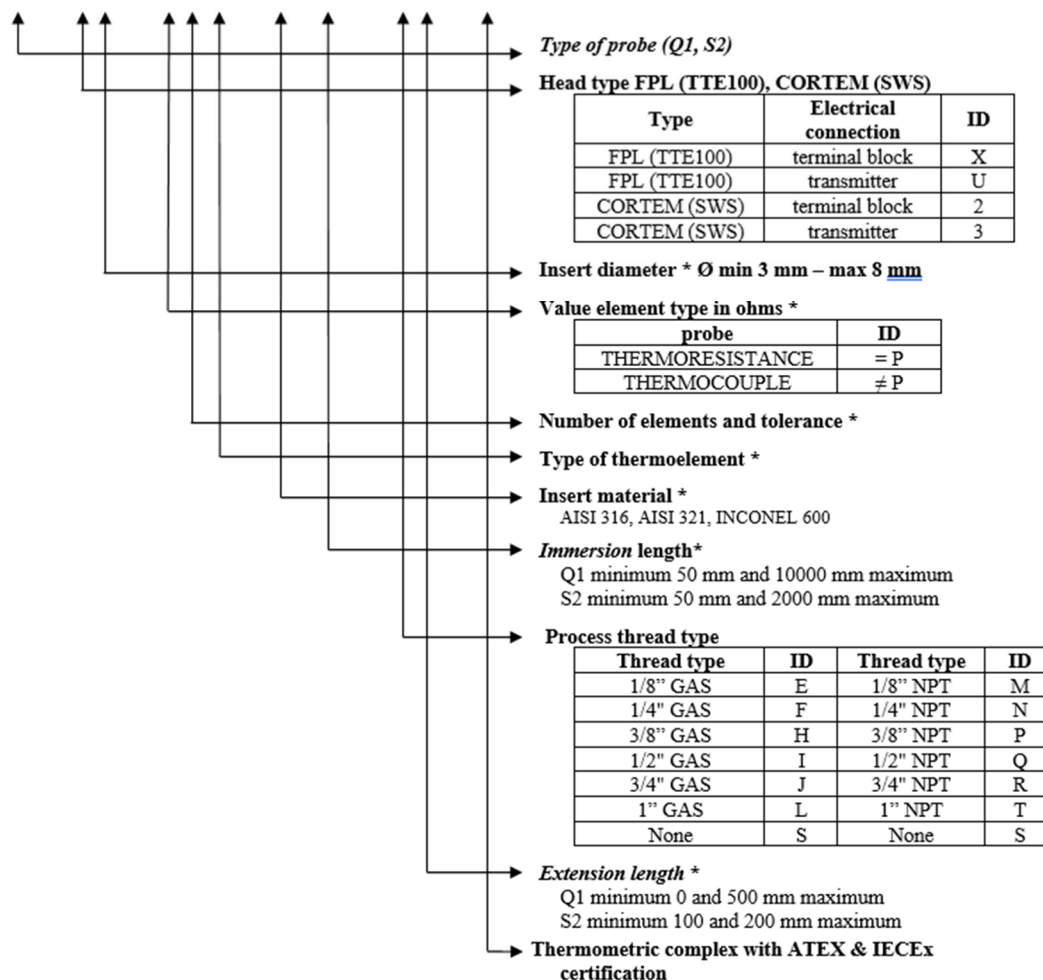
The equipment is also compliant to IEC 60079-31:2022 and IEC 60079-26:2021.

[13] Annex

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[15.1] Models/Series Identification:

XX. XXX - XXX - XXXX - XXX / A



* Parameters that do not affect the mode of protection

[15.2] Ratings:

Rated voltage: from 10 to 30 Vdc
Rated current: from 4 to 20 mA; or
1 mA (for RTD)
Maximum process temperature: 400°C

[15.3] Safety ratings:

None

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[15.4] Ambient temperature and temperature classes:

Rated ambient temperature: from -20°C to +50°C

The Temperature Class of the equipment T6...T1 depends on the process temperature according to the following table.

The maximum surface temperature T85°C...T440°C is selected as the highest temperature value for the corresponding Tclass.

Process temperature 'Tp' up to / °C	Temperature class for GAS	Maximum surface temperature for DUST
Tp ≤ 80	T6	T85°C
95	T5	T100°C
130	T4	T135°C
195	T3	T200°C
290	T2	T300°C
400	T1	T440°C

[15.5] Degree of protection (IP code):

IP66 (according to EN IEC 60079-0 and IEC 60529)

IP 66/67 (declared by the manufacturer for identification codes "Q1.2", "Q1.3", "S2.2", "S2.3");

[15.6] Warnings:

- See instruction document
- After de-energizing, delay 15 minutes before opening

[16] **Report:** AT20-0057864-01

[16.1] Routine (factory) tests:

- The manufacturer shall carry out the routine test prescribed at clauses 27 of the EN 60079-0.
- The manufacturer has to verify the integrity of the welded construction by means of routine overpressure testing (in compliance with clause 15.2.3.2 of EN 60079-1) at a pressure of:
 - 11.3 bar for identification codes "Q1.X", "Q1.U", "S2.X", "S2.U; or
 - 13.3 bar for identification codes "Q1.2", "Q1.3", "S2.2", "S2.3".

As an alternative, when this test is impractical, the integrity of the welds may be verified by the following methods:

- Liquid penetrant weld inspection; or
- Radiographic weld inspection.

In addition, for series S2 equipment, the manufacturer has to verify that the partition wall can sustain the specified maximum operational parameters (pressure and temperature) by means of routine overpressure testing for 60s without leakage at the maximum rated operational temperature and operational pressure applied from the process side.

[16.2] Conformity with the documentation:

The manufacturer shall carry out the verifications or tests necessary to ensure that the product complies with the documentation.

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Marking the equipment in accordance with Clause 29 of EN 60079-0, the manufacturer attests on his own responsibility that:

- the equipment has been constructed in accordance with the applicable requirements of the relevant standards in safety matters;
- the routine verifications and routine tests in 28.1 of EN 60079-0 have been successfully completed with positive results.

[16.3] Installation conditions:

The equipment is foreseen to be installed in locations where there are environmental conditions as clearly specified at clause 1, par. 2 of EN 60079-0.

Installation and use in atmospheric and environmental conditions that are out of above mentioned intervals require special considerations and additional measures.

It is not a requirement of the applicable standards listed in first page that the certification body confirm suitability for these special considerations and additional measures.

Installation of equipment shall be done according to EN 60079-14 Standard requirements.

The user has to connect the free extremity of cable either in non-explosive atmosphere or in an enclosure protected by a recognized type of protection.

The cable that is connected to the equipment must be at least 3 meters long (otherwise a "barrier" cable gland must be used).

Entry cable devices have to be selected according to Table 10 of EN 60079-14 and they shall be compliant with the following:

- They shall be ATEX certified according to current edition of EN IEC 60079-0, EN 60079-1 and EN 60079-31, with EPLs Gb and Db, and installed according EN 60079-14;
- They shall guarantee the declared protection degree of the equipment and shall have operating temperature suitable for a range from -20°C to +85°C;
- They shall be of type:
 - ½" NPT (for identification codes "Q1.X", "Q1.U", "S2.X", "S2.U"); or
 - ¾" NPT (for identification codes "Q1.2", "Q1.3", "S2.2", "S2.3");

[17] Special Condition of use (X):

- The equipment shall be installed in compliance with manufacturer's safety instruction document.
- The installer has to space out the terminal box enclosure from the process in order to guarantee that the temperature on its surface does not exceed the maximum ambient temperature specified (when the equipment is switched off).
- User has to periodically clean the enclosure in order to avoid the creation of a dust layer higher than 5 mm.
- Flameproof joints are not intended to be repaired.
- Potential electrostatic charging hazard – Painted equipment shall be cleaned only with a damp cloth or antistatic products.

In addition, for series S2 equipment:

- The user has to apply the safety requirements of relevant industrial standard in order to ensure that the partition wall can sustain the specified process pressure, temperature or mechanical loads.
- The user has to ensure that the process connection will result in a sufficient tight joint (IP66 or IP67 according to IEC 60529) for the specified process condition.
- Graphite tape type shall be applied to the process thread (only when it complies to ISO 228)

[13]

Annex

[14]

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[18]

Essential Health and safety Requirements:

This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed in [9].

This Certificate **does not** cover hazards coming from environmental conditions different from those clearly and precisely indicated and covered in clause 1 of EN 60079-0.

ESHR 1.2.7 According Annex IV of the Directive

ESHR 1.4 Not verified.

ESHR 1.5 Not verified as this is not a safety device performing safety function.

ESHR 3 Not applied as this is not a protective system.

In addition to the Essential Health and Safety Requirements (EHSRs) covered by the standards listed at [9], the following are considered relevant to this product, and conformity is demonstrated in the report:

N/A

[19]

Descriptive documents:

DL-AT20-0057864-01, rev.0, dated 2024-05-21.

[20]

Certification Validity Conditions:

The use of this Certificate is subject to the Certification Scheme and to the Regulation applicable to holders of IMQ Certificates.

The validity of this certificate is subject to the condition that the manufacturer complies with the results of the document review and of the pertinent requirement if any included, recorded in the relevant copy of documentation as per 19.

One copy of the mentioned documentation is kept in IMQ file.

[21]

Variations

Issue 0